UNITED STATES PATENT AND TRADEMARK OFFICE

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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EXAMINER
TANG, KAREN C

ART UNIT	PAPER NUMBER
2151	

DATE MAILED: 05/18/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

PTO-90C (Rev. 10/03)

	Application No.	Applicant(s)
Office Action Summary	09/823,132	GROSS, GERHARD W.
	Examiner	Art Unit	
	Karen C. Tang	2151	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE _3_ MONTH(S) FROM
THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed
after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any
earned patent term adjustment. See 37 CFR 1.704(b).

Status

1) ☒ Responsive to communication(s) filed on _3/30/01_.

2a) ☒ This action is **FINAL**.   2b) ☐ This action is non-final.

3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is
closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4) ☒ Claim(s) _1-47_ is/are pending in the application.

    4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5) ☐ Claim(s) _____ is/are allowed.

6) ☒ Claim(s) _1-47_ is/are rejected.

7) ☐ Claim(s) _____ is/are objected to.

8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9) ☐ The specification is objected to by the Examiner.

10) ☒ The drawing(s) filed on _30 March 2001_ is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.

    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

    Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

    a) ☐ All   b) ☐ Some * c) ☐ None of:

      1. ☐ Certified copies of the priority documents have been received.

      2. ☐ Certified copies of the priority documents have been received in Application No. _____.

      3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage
application from the International Bureau (PCT Rule 17.2(a)).

    * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)

2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
    Paper No(s)/Mail Date _____.

4) ☐ Interview Summary (PTO-413)
    Paper No(s)/Mail Date. _____.

5) ☐ Notice of Informal Patent Application (PTO-152)

6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that

form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in a patent granted on an application for patent by another filed in the
United States before the invention thereof by the applicant for patent, or on an international application
by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this
title before the invention thereof by the applicant for patent.

The changes made to 35 U.S.C. 102(e) by the American Inventors Protection Act

of 1999 (AIPA) and the Intellectual Property and High Technology Technical

Amendments Act of 2002 do not apply when the reference is a U.S. patent resulting

directly or indirectly from an international application filed before November 29, 2000.

Therefore, the prior art date of the reference is determined under 35 U.S.C. 102(e) prior

to the amendment by the AIPA (pre-AIPA 35 U.S.C. 102(e)).

I. Claim 1-3, 12, 14, 17-19, 29, 30, 31, 40, and 42 are rejected under 35

U.S.C. 102(e) as being anticipated by Aoki et al. hereinafter Aoki (US 6,575,255 B1).

1. Referring to Claim 1, 17 and 30 Aoki discloses:

identifying a plurality of links (VC1 and VC2, refer to Col 6, Lines 5-25) that

commonly share the test segment to be tested, the test segment (refer to VCI

communication path, refer to Fig 1, and Col 6, Lines 63-67 and Col 7, Lines 1-67) being

directly connected to a first network device (17, refer to Fig 1) and a second network

device (18, refer to Fig 1).

sending a plurality of packet profiles (Examiner interprets the packet profiles from

the application as the TCP communication information from the prior art.) from a

plurality of source nodes to a plurality of destination nodes via the plurality of links (VC1

and VC2, refer to Col 6, Lines 1-25), each link of the plurality of links connecting a

source node with a destination node, each link including the test segment (Examiner

interprets the test segments as the log information of the TCP packets) refer to Fig 1,

Col 6, Line 15-25, 62- 67, and Col 7, Lines 1-10.

manipulating start times for sending the plurality packet profiles, or a portion

thereof, from the plurality of source nodes or a portion thereof, so that the plurality of

packet profiles flow through the test segment essentially simultaneously. Examiner

interprets the manipulating start time as multiple clients sending information through a

synchronous network in which despite the time the information is transferred, the

packets profiles will be sent out simultaneously refer to Fig 4, Col 2, Lines 65-67, Col 3,

Lines 1-56, Col 7, Lines 10-25, Col 10, Line 37-52.

receiving the plurality of packet profiles at the plurality of destination nodes,

wherein each of the packet profiles comprises a plurality of packets (TCP

communication data, and byte count measurements (packet size and packet category,

and segment sizes) and time stamps (Transmitting and Receiving time) are made at the

plurality of destination nodes refer to Fig 7, Col 6, Line 25- 67, Col 7, Line 1-10.

2. Referring to Claim 12, 14, 40 and 42 Aoki discloses:

identifying a plurality of links (VC1 and VC2, refer to Col 6, Lines 5-25) that

commonly share the test segment to be tested, the test segment (refer to VCI

communication path, refer to Fig 1, and Col 6, Lines 63-67 and Col 7, Lines 1-67) being

directly connected to a first network device (17, refer to Fig 1) and a second network

device (18, refer to Fig 1).

sending a packet burst from a source node to a destination node via a link of the

plurality of links (VC1 and VC2, efer to Col 6, Lines 1-25) including at least the test

segment refer to Fig 1, and Col 6, Line 15 - 67.

receiving the packet burst at destination node, the packet burst comprising a

plurality of packets, wherein a first time stamp Tsfirst Of the first packet of the packet

$$Rate(bps) = \frac{Bytes_{total} * 8}{TS_{last} - TS_{first}}.$$

burst, a last time stamp Tslast Of the last packet of the packet burst and a byte count

measurement measuring the bytes Bytestotal in the packet burst are made at the

destination node, the bandwidth capacity of the test segment in bit per second being

calculated using an expression,

refer to Col 8 Line 45 – 60, the only Bytes is 8 times the bites, thus in this case,

BW = Rate(Bytes per second), Bytes = Bites * 8, and the RTT = Tslast – Tsfirst.

3. Referring to Claim 2 and 18 Aoki stated,

a central server (Examiner interprets a central server as a communication device

which can transmit information via communication subnetwork)is utilized to command

the plurality of source nodes to send the plurality of packet profile at specific times,

including the manipulation of the start times for the plurality of packet profiles refer to

Col 6, Lines 1-68, Col 10, Line 37-52.

4. Referring to Claim 29, Aoki discloses wherein the nodes are added as software modules to existing end hosts or network devices refer to Col 6, Line 33-45.

5. Referring to Claim 3 and 19, and 31, Aoki discloses wherein the network is a time synchronized network and each of the plurality of packet profile is a packet burst refer to Col 6, Line 34-37, Col 7, and Line 10-25.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all

obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

II. Claims 4-6, 13, 15, 16, 20-22, 32-34, 41, 43 and 44 are rejected under 35

U.S.C. 103(a) as being anticipated by Aoki et al. hereinafter Aoki (US 6,575,255 B1) in

view of "Communication System An Introduction to Signals and Noise in Electrical

Communication" by Carlson et al. hereinafter Carlson.

1. Referring to Claim 4, 13, 20, 32, and 41, Aoki does not expressly discloses

related to the Degree of Desynchronization (DoD) by an expression, $L = \dfrac{DoD}{ErrLim}$, where ErrLim

represents a maximum desired error in the segment bandwidth capacity determination.

However, Carlson discloses :

related to the Degree of Desynchronization (DoD) by an expression, $L = \dfrac{DoD}{ErrLim}$, where ErrLim

represents a maximum desired error in the segment bandwidth capacity determination.

Refer to Chapter 5.2, Page 201. Line 15-20 Equation 3.

At the time the invention was made, it would have been obvious to one of

ordinary skill in the art to have combine Carlson and Aoki idea because it is important to

find out under what requirement can the transmission Bandwidth still be operational so

that the links can transmit data without overloading.

2. Referring to Claims 5, 21, and 33 Aoki stated:

wherein the time stamps made at each of the plurality of destination nodes are a

first time stamp Tssrst of the first packet of the packet burst received from each

corresponding source node and a last time stamp Tslast of the last packet of the packet

burst received from each corresponding source node, and the byte count

measurements measure the bytes Bytestotal in each of the packet bursts received at

each corresponding destination node refer to Col 1, Line 25-35, and Col 7, Line 25-40.

3. Referring to Claims 6, 22, and 34, Aoki discloses that, wherein an individual

flow rate in bit per second due to each packet burst is calculated using an expression,

And a total flow rate through the test segment is the sum of all individual flow

$$Rate(bps) = \frac{Bytes_{total} * 8}{TS_{last} - TS_{first}}$$

rates refer to Col 7, Line 25-40, and Col 8, Line 45 – 60.

4. Referring to Claims 15 and 43 Aoki does not expressly discloses wherein the

length Lsingle of the packet stream is greater than or equal to (2 * T) + 2s, where

epsilon is used to compensate for small timing error.

Carlson discloses:

wherein the length Lsingle of the packet stream is greater than or equal to (2 * T)

+ 2s, where epsilon is used to compensate for small timing error. Refer to Chapter 5.2

Page 201, Line 1-6.

At the time the invention was made, it would have been obvious to one of ordinary skill in the art to have combine Carlson and Aoki idea because it is important to find out under what requirement can the transmission Bandwidth still be operational so that the links can transmit data without overloading.

5. Referring to Claim 16 and 44, Aoki does not disclose wherein the length Lsîngle of the packet stream is greater than or equal to T + 2s, where epsilon is used to compensate for small timing error refer to Chapter 5.2, Page 202 Equation 7b.

Carlson does disclose wherein the length Lsîngle of the packet stream is greater than or equal to T + 2s, where epsilon is used to compensate for small timing error refer to Chapter 5.2, Page 202 Equation 7b.

At the time the invention was made, it would have been obvious to one of ordinary skill in the art to have combine Carlson and Aoki idea because the above equation is the variation of the previous equation, and it is simply differ due to the phase modulation.

III. Claims 7, 11, 23, 27, 28, 35, 39, and 45-47 are rejected under 35 U.S.C. 103(a) as being anticipated by Aoki et al. hereinafter Aoki (US 6,575,255 B1) in view of "Communication Networks Fundamental Concepts and Key Architectures" by Garcia et al. hereinafter Garcia.

1. Referring to Claim 7, 23, and 35, Aoki discloses each of the plurality of packet profiles is a packet stream, and a plurality of byte count measurements are made over a time measurement period T at each of the plurality of destination nodes refer to Col 6, Line 34-40, and Col 22, Line 10-15.

Aoki does not expressly disclose the network is asynchronous network.

Garcia discloses the network is asynchronous network refer to Chapter 7, Page 530, Fourth Paragraph.

At the time the invention was made, it would have been obvious to one of ordinary skill in the art to have combine Garcia's and Aoki idea because by applying the method to both synchronous and asynchronous network, the sources node has more control over the packets transmission.

2. Referring to Claim 28, Aoki discloses wherein the nodes are distributed at the edges of the network and exist in stand-alone boxes. It is known that within the network it has units/nodes around the edges and the nodes can be stand along refer to Col 6, Line 10-40.

3. Referring to Claim 11, 27, and 39, Aoki does not expressly disclose that the network bandwidth of a link capacity is determined by the link which has a maximum throughput of the slowest segment in the link.

Garcia discloses that the network bandwidth of a link capacity is determined by the link which has a maximum throughput of the slowest segment in the link refer to Chapter 7, Page 528, Second Paragraph.

At the time the invention was made, it would have been obvious to one of ordinary skill in the art to have combine Garcia's and Aoki idea because it can prevent the link from overloaded when they have to cope with too many packets in the streams. Thus by determine the network bandwidth of a link capacity by determine the links'

maximum throughput of the slowest segments can keep the network resources utilized of all time.

4. Referring to Claims 45, 46, and 47, Aoki does not expressly discloses that if at least two of the plurality of sources nodes added up and equal to the maximum throughput of the slowest segment of the link, then the packets of which they are transmitting can be sent through the link to the same destination node

Garcia discloses that if at least two of the plurality of sources nodes added up and equal to the maximum throughput of the slowest segment of the link, then the packets of which they are transmitting can be sent through the link to the same destination node refer to Chapter 7, Page 528, Second Paragraph.

At the time the invention was made, it would have been obvious to one of ordinary skill in the art to have combine Garcia's and Aoki idea because when the sources are aggressive and sent numerous packets at the same time, as long as the sources nodes added up its packets capacities and does equal or to the maximum throughput of the slowest segment of the link, it can prevent the network from overloading.

IV. Claims 8-10, 24-26, and 36-38 are rejected under 35 U.S.C. 103(a) as being anticipated by Aoki et al. hereinafter Aoki (US 6,575,255 B1) in view of "Communication Networks Fundamental Concepts and Key Architectures" by Garcia et al. hereinafter Garcia in further view of "Communication System An Introduction to Signals and Noise in Electrical Communication" by Carlson et al. hereinafter Carlson .

1. Referring to Claims 8, 24 and 36, Aoki does not disclose the Degree of

Desynchronization (DoD) by an expression, Lmultiple = (4 * T) + 2E , where the time

measurement period T is one half of DOD and epsilon s is used to compensate for

small timing errors.

Carlson discloses the Degree of Desynchronization (DoD) by an expression,

Lmultiple = (4 * T) + 2E , where the time measurement period T is one half of DOD and

epsilon s is used to compensate for small timing errors refer to Chapter 5.2 Page 201,

Line 1-6.

At the time the invention was made, it would have been obvious to one of

ordinary skill in the art to have combine Carlson and Aoki idea because the above

equation is a variation of the Lsingle since it is only different from the amplitude

modulation.

2. Referring to Claim 9, 25 and 37 Aoki discloses that wherein the time stamps

made at each of the plurality of destination nodes are a plurality of time measurements

MTn, where n is an integer, each time measurements ML being separated by the time

measurement period T and each measuring byte count over the period T since last time

measurement MTn-I in each of the packet streams received at each corresponding

destination node, refer to Col 7, Line 25-40, Col 6, Line 35-40 and Col 22, Line 10-15.

3. Referring to Claims 10, 26, and 38, Aoki discloses that, wherein an individual

flow rate in bit per second due to each packet burst is calculated using an expression,

And a total flow rate through the test segment is the sum of all individual flow

$$Rate(bps) = \frac{Bytes_{total} * 8}{TS_{last} - TS_{first}}$$

rates refer to Col 7, Line 25-40, and Col 8, Line 45 – 60.

Response to Arguments

Applicant's arguments with respect to claims 1-47 have been considered but are

moot in view of the new ground(s) of rejection, however, examiner respectfully

considered applicants arguments filed on 3/30/01, but they are not persuasive.

1) As to point (1) In response to applicant's argument: that cannot be interpreted as "the

log information of the TCP packets" (2) the plurality of packets profiles flow through the

test segment "essentially" simultaneously.

2) Examiner respectfully traverse the argument: the packet size is determined based on

a maximum transmission unit of the router of the communication path, and the TCP

communications may be extracted out of the piece of log information collected by the

packet monitoring unit (refer to Col 7, Lines 40-55). Thus, the Log information, which is

related to packet size and the packet size, is related to the transmission unit, which is

the links/path of TCP communication. (2) The definition of the word "essentially" -

Constituting or being part of the essence of something; inherent, which does not limit

the time frames of when the packets profiles flow through the test segments, so which

can be interprets as few seconds differences (refer to Fig 3).

Conclusion

THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Karen C. Tang whose telephone number is (571)272-3116. The examiner can normally be reached on M-F 7 - 3.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Zarni Maung can be reached on (571)272-3939. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the
Patent Application Information Retrieval (PAIR) system. Status information for
published applications may be obtained from either Private PAIR or Public PAIR.
Status information for unpublished applications is available through Private PAIR only.
For more information about the PAIR system, see http://pair-direct.uspto.gov. Should
you have questions on access to the Private PAIR system, contact the Electronic
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